

REMARKS

Reconsideration and allowance are respectfully requested in light of the above amendments and the following remarks.

Claim 8 has been amended. Support for the feature added to claim 8 is provided in the specification on page 7, lines 14-22.

Claims 8, 2-4, and 7 were rejected, under 35 USC §103(a), as being unpatentable over Yamamoto (GB 2,031,247) in view of Ueda et al. (US 5,751,828). Claim 5 was rejected, under 35 USC §103(a), as being unpatentable over Yamamoto in view of Ssutu (US 6,535,613). Applicant respectfully traverses.

The combined teachings of Yamamoto and Ueda fail to suggest the feature now recited in claim 8 of a magnet whose diameter is greater than that of an associated core, such that the magnet has a peripheral projection, which is annular and radial and of constant magnitude all around its axis of symmetry, with respect to the core.

Although the Final Rejection proposes that one of ordinary skill in the art would know that disk-shaped magnets are commonly used in magnetic circuits (Final Rejection page 3, lines 10-12), a novel and unobvious feature of the presently claimed invention is that the magnet has a circular periphery with a diameter greater than that of an associated core. Neither Yamamoto nor

Ueda suggests a magnet whose circular periphery has a diameter greater than that of an associated core.

Accordingly, Applicant submits that the applied references in combination with the knowledge attributable to a skilled artisan would not suggest the subject matter defined by claim 8. Therefore, allowance of claim 8 and all claims dependent therefrom is warranted.

Dependent claim 3 not only requires the magnet of claim 2 to have a circular periphery but further requires the peripheral radial projection of the magnet, with respect to the core, to be about the thickness of the magnet. The Final Rejection proposes that Yamamoto discloses this feature in Fig. 1 (Final Rejection page 4, third paragraph). However, the following discussion will show why this is not so.

Applicant submits herewith an enlarged copy of Yamamoto's Fig. 2, with colored lines and areas added to emphasize the differences between the features recited in claim 3 and those disclosed by Yamamoto. Referring now to the enclosed Fig. 2, Yamamoto discloses a ferrite magnet 2 having a square shape (Yamamoto, abstract). Yamamoto also discloses that a tapered portion 3b of a magnetic circuit pole 3, which the Final Rejection proposes to correspond to the claimed core (Final

Rejection page 3, lines 4-5), is circular (Yamamoto Fig. 2 and abstract).

As may be seen by inspection of the enclosed Fig. 2, the peripheral projection of Yamamoto's magnet 2 with respect to pole portion 3b is not constant. At the middle of the sides forming the square periphery, magnet 2's peripheral projection beyond the periphery of pole portion 3b is small, as emphasized by the red circle added to enclosed Fig. 2. However, in the corners of magnet 2's square periphery, the peripheral projection of magnet 2 beyond the periphery of pole portion 3b is much larger, as emphasized by the added blue circle.

From the radial difference between the red and blue circles added to the enclosed Fig. 2, it is clear that Yamamoto does not disclose a magnet having a circular periphery whose peripheral radial projection, with respect to a core, is about the thickness of the magnet. Instead of a magnet having a constant radial peripheral projection with respect to a core, as recited in claim 3, Yamamoto discloses a magnet having a radial peripheral projection that varies with respect to a core based on the projection's radial angle relative to a reference radial segment.

Dependent claim 2 similarly recites a magnet having a constant radial peripheral projection with respect to a core.

Claim 2 differs from claim 3 in that claim 2 defines the peripheral radial projection of the magnet, with respect to the core, to be at most equal to three times the thickness of the magnet, while claim 3 defines the peripheral radial projection of the magnet, with respect to the core, to be about the thickness of the magnet.

The benefit provided by the features recited in claims 2 and 3 is that the amount of unnecessary material in the magnet may be reduced or eliminated by comparison to the magnetic circuit disclosed by Yamamoto. As illustrated in the enclosed Fig. 2, the green colored corners of Yamamoto's magnet 2, which contain the material of magnet 2 between the red and blue circles, are completely unnecessary and even detrimental because they generate a lack of magnetic uniformity around the axis of pole 3. The magnets defined by claims 2 and 3 do not have such undesirable additional material because they are circular and do not extend unnecessarily beyond the periphery of their respective cores.

Since Yamamoto discloses the use of a ferrite magnet, which is relatively inexpensive, the unnecessary magnetic material does not substantially affect the cost of the speaker.

The claimed invention, though, includes an Nd-Fe-B magnet. Since Nd-Fe-B material is expensive, the inclusion of unnecessary

Nd-Fe-B material in a magnetic circuit may substantially affect the cost of the circuit. Therefore, the invention defined by claims 2 and 3 reduces the amount of unnecessary Nd-Fe-B material in a magnetic circuit and thereby reduces the cost of the circuit. Moreover, the present invention provides a substantially uniform magnetic field around the axis of the magnetic circuit, because it does not include the non-uniformly distributed excess magnetic material, as does Yamamoto's device.

Although Ueda is cited in the Final Rejection for disclosing an Nd-Fe-B magnet in a magnetic circuit of a loudspeaker, the Final Rejection does not propose that Ueda supplements the teachings of Yamamoto with regard to the above-described features distinguishing claims 2 and 3 from Yamamoto.

In accordance with the above discussion, Applicant submits that the combined teachings of Yamamoto and Ueda do not suggest the subject matter defined by claims 2 and 3 and the benefits accruing therefrom. Therefore, allowance of claims 2 and 3 is warranted.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,



James E. Ledbetter
Registration No. 28,732

Date: June 30, 2004
JEL/DWW/att

Attorney Docket No. L7307.02110
STEVENS DAVIS, MILLER & MOSHER, L.L.P.
1615 L Street, N.W., Suite 850
P.O. Box 34387
Washington, D.C. 20043-4387
Telephone: (202) 785-0100
Facsimile: (202) 408-5200